

A NEW GENUS, SPECIES AND FAMILY OF HYMENOPTERA
(ICHNEUMONOIDEA) FROM CHILE

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Abstract.—*Apozyx penyai*, a new genus and species, is described from the temperate forest of Arauco province, Chile. The species has a mixture of features of Ichneumonidae, Braconidae and Agriotypidae. It represents a new family, Apozygidae.

A single male specimen, superficially resembling a *Spathius* (Braconidae) with a second recurrent vein, collected by Luis E. Peña in Chile has long stood in the Canadian National Collection. I delayed description in the hope of obtaining more specimens, especially to discover the characteristics of the female; but now, after almost 20 years of waiting and examining at least 20,000 Ichneumonoidea from Chile, I am convinced that the species must be so rare that further delay is unjustifiable. I think it best to describe this strange creature in hope that the publication will stimulate those with opportunity to make an effort to find more specimens.

Apozyx penyai Mason, new genus and new species

This description is to cover genus and species. It seems pointless to guess at the hierarchical levels appropriate to the various characters on the basis of one specimen.

Etymology.—The generic name is a Greek masculine noun¹ meaning bachelor. The spelling of the specific patronym, because the diacritic “ñ” is not allowed by the Code (Art. 27), is modified to produce the approximately correct pronunciation by most European language speakers.

Description.—Head subcuboid, sparsely hairy, and generally shiny (Figs. 1-4); mandibles stout and short but strongly tapered, (Figs. 3 and 4) upper tooth larger than lower; maxillary palpi with 5 articles, the most proximal 2 apparently fused; labial palpi with 4 subequal thickened articles; clypeus with a very prominent transverse ridge, the apical part strongly receding (Figs. 3 and 5), apical margin concave; labrum polished and concave, filling cavity between mandibles and clypeus, mouth thus resembling that of a cyclostome braconid but opening lenticular, about 2× as wide as long (Fig. 4); antennae unspecialized (Fig. 9), flagellum 16-jointed, articles 2-4× longer than wide and bearing longitudinal placodes; ocelli round and small (Fig. 2); occipital carina complete, joining hypostomal well above mandible base.

Thorax (Figs. 1, 2 and 7). Pronotal structure typical of Ichneumonoidea, that is, 2 triangular sides connected by a narrow transverse collar and

posterior corners touching tegulae and fore coxae; propleuron with a small lobe overlapping pronotum at lower corner; notauli deep, crenulate, and extending back to meet just before scutellum (Fig. 2); median lobe of scutum broadly concave medially and strongly elevated laterally at notauli where the scutum turns down from horizontal to vertical; scutellum apically weakly striate and bearing a low median carina on the apical declivity (Fig. 2); mesopleuron with complete prepectal carina and mesulcus but without sternauli (Fig. 1); propodeum (Figs. 1 and 7) long and areolated, with conspicuous apophyses and a strongly marked declivity behind them; pronotum, metapleuron and propodeum mostly rugose, balance of thorax smooth and sparsely hairy.

Legs with divided trochanters; tibial spurs short, 1: 2: 2; tarsal claws simple; fore tibia with dense multiple rows of thickened hairs on outer anterior side; middle tibia with a similar but weaker armature; remainder of legs shiny and sparsely hairy except for dense hair on inner apical part of all tibiae and on the tarsi. Hind coxae and abdomen arising from 3 separate foramina on the thorax and propodeum.

Wings (Fig. 8) with venation most similar to Braconidae but the forewing with a strong 2nd recurrent; hindwing with a short, but sclerotized discoidella and no trace of brachiella; 3 hamuli on metacarpella; basella meeting subcostella proximad to radiella; no trace of anal lobe.

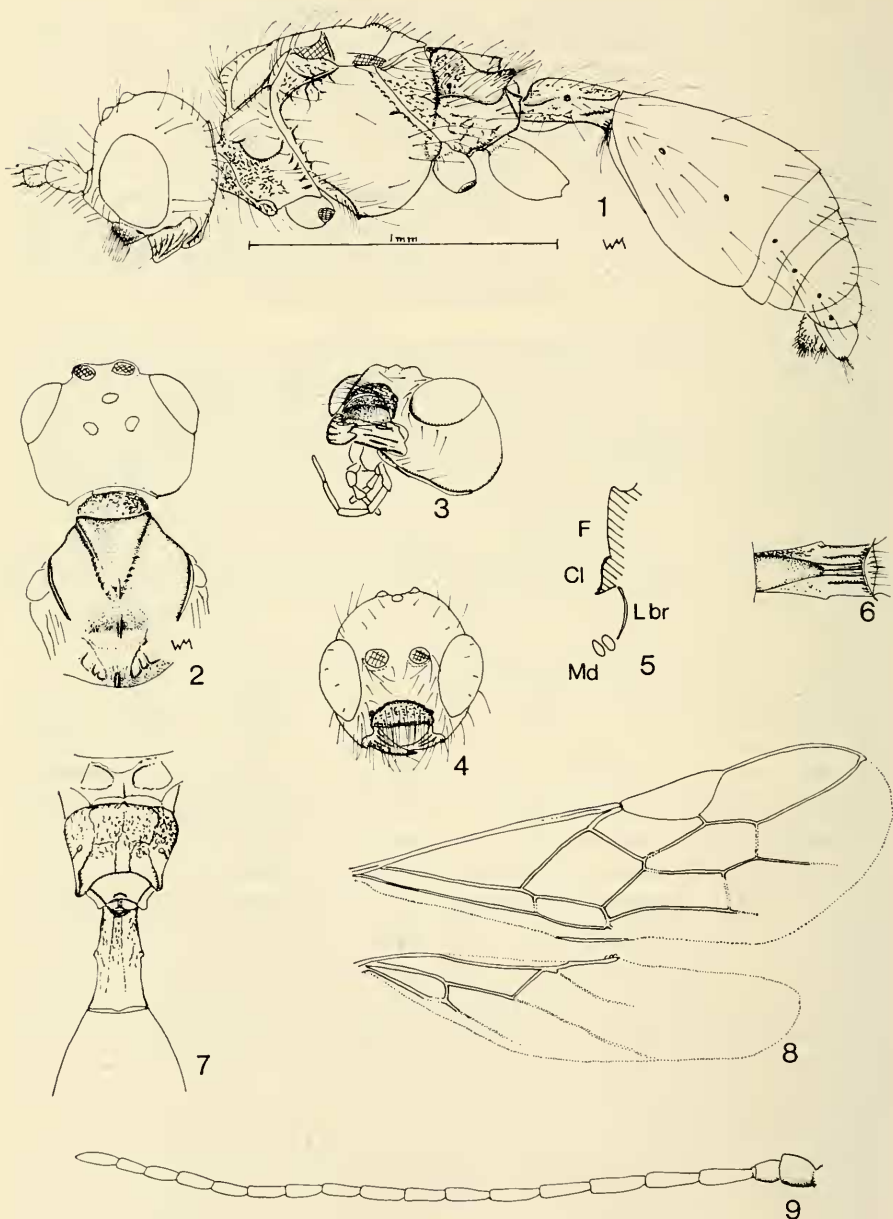
Abdomen with tergum I and sternum I solidly fused into a rigid, rugose, tubular petiole (Figs. 1, 6 and 7); sternum I smooth and visible only beneath anterior $\frac{1}{2}$ of petiole; petiolar segment truncate posteriorly, thus the sternal and tergal regions equally long; sides of tergum I apparently [Without dissection it is impossible to decide whether the sternite ends near the middle or extends narrowly to the posterior end of the first segment.] meeting along midventral line of posterior $\frac{1}{2}$ of petiole (Fig. 6); a lunule of soft integument present at base of sternum II. Remainder of abdomen (Fig. 1), both terga and sterna sclerotized, smooth, sparsely hairy and evenly convex; terga II and III fused and very large; sterna overlapping and not fused; more posterior terga and sterna freely articulated and somewhat telescoped; hypopygium small, apically emarginate and simple; parameres simple, balance of genitalia difficult to observe; pygostoles present, a little longer than wide.

Female unknown.

Holotype.—♂, Pichinahuel, Cordillera Nahuelbuta, Arauco, CHILE, 10–20 Jan. 1959, Luis E. Peña. CNC No. 15523.

Discussion

Although the affinities of *Apozix* could be more confidently assessed with a knowledge of the female and larval anatomy and the life history, there is enough evidence in the male to show that it fits best in the



Figs. 1-9. *Apozyx penyai*. 1, Lateral whole view. 2, Head to scutellum, dorsal. 3, Head, lateroventral. 4, Head, anterior. 5, Theoretical median longitudinal section of head to show arrangement of face (F), clypeus (Cl), labrum (Lbr) and mandibles (Md). 6, Ventral side of petiole, anterior end to left. 7, Metanotum, propodeum and petiole, dorsal. 8, Wings (scale $\frac{2}{3}$ as large as other figures). 9, Antenna.

Ichneumonoidea. The following features are significant for this placement: 1, antennae not elbowed, i.e., the scape short; 2, flagellum with 16 articles; 3, flagellar articles with longitudinal placodes; 4, mandibles with two apical teeth; 5, trochanters double; 6, costa and subcosta of forewing fused; 7, large pterostigma present; 8, no anal lobe in hindwing; 9, copious venation with two closed cells in hindwing; 10, true abdomen with 9 distinct segments; and 11, spiracles on each tergum from 1 to 8.

The hindwing venation is of the braconid type because of the presence of a basellan vein (2r-m) and absence of an intercubital (3r-m). The forewing is braconid-like because of the large 2nd cubital cell (1Rs) and basal abscissa of cubitus (Rs+M) but the 2nd recurrent (2m-cu) vein is never found in braconids (except rarely in freaks).

The abdomen suggests the Agriotypidae by its fused second and third terga, by its convex and strongly sclerotized sterna and by the fused and tubular petiole.

The petiolar structure is significant. In all generalized Ichneumonidae and Braconidae the petiolar sternum is separate and divided into a rigidly sclerotized anterior part and a partly membranous posterior part that may bear one or two weakly sclerotized plates. Even in specialized groups where the elements are fused, the posterior part of the sternite is never as long as the tergite and always leaves a V- or U-shaped membranous area at the ventral apex. In most Chalcidoidea, Cynipoidea, large parts of the Proctotrupoidea and in Agriotypidae and Evaniidae the petiolar tergite and sternite are fused into a tubular or ring-like structure, whose ventral surface is about equal to the dorsal, so that there is no apical ventral membranous area. This is the type of petiole found in *Apozyx*. It raises the possibility that *Apozyx* may really be related to unknown, and presumably more fully veined, ancestors of some microhymenopterous group. However the possibility is so speculative that I think it better at present to place *Apozyx* in Ichneumonoidea where most its characters are harmonious. It will be difficult to place it confidently until there is far better knowledge of *Apozyx* and of phylogeny of Apocrita.

Nevertheless a placement must be made. The genus can be forced into existing families only by a procrustean redefinition of family characters that I find unacceptable. I place this genus in a new family, Apozygidae, assigned provisionally to Ichneumonoidea.

Family Characters

Apozygidae.—Mandible 2-toothed; antennal flagellum with more than 14 articles; trochanters divided. Wings present and with generalized venation; forewing with costa and subcosta fused; stigma large; basal abscissa of cubitus (Rs+M) present; 2nd cubital cell (1Rs) large; 2nd recurrent (2m-cu) present. Hind wing with 2 closed cells; basellan vein

(2r-m) meeting subcosta before radius; intercubitella (3r-m) absent. Petiole tubular and with components completely fused, ventrally with no membranous area; sternum II and following fully sclerotized and evenly convex when dry; metasomal spiracles 1-7 all present and approximately equal sized.

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Footnote

¹*Apozix* is not found in most Greek dictionaries because it was used only by one Eustathius in the 12th century.—Editor's note (G. C. Steyskal).